231 (242) for herding or driving cattle and the natives seemed much surprised at the idea. They are not eaten and the flesh is considered disgusting, although there is no definite taboo on it. There seemed to be no dogs in many villages and their economic importance is slight.

Cattle are all of the humped or zebu variety, with moderately long sideward curving horns. The size of the hump varies with the animal's age and condition and is hardly noticeable in many cases. There is a great variety of colors and markings, each known by a special name, but black and white seem to predominate. There are said to be a few wild cattle, descendants of escapes, which are very shy and live in the heavy forest.

193 The cattle belonging to each village are herded together by boys, with, in the old days, a few armed men for protection. During the day they are allowed to graze anywhere on land that is lying fallow. At night they are driven into pens, which are now on the outskirts of the villages. In the old days the pens were often in the villages and the cattle were driven within the enclosure if an attack threatened.

97 The Manchu cattle pens are like large, roughly built houses with thatched roofs and open sides. Among the Hongo, who live in heavy territory, the pens are usually open. They are made from posts planted about 2 feet apart and lined together with withes or vines. Two posts, planted one behind the other, stand on each side of the entrance, which is closed by dropping long saplings in between them. Semi-subterranean pens of the pit-like type are unknown among the Tungus. The pens are never cleaned and in some I saw the manure had accumulated to a depth of over 3 feet.

412 6/6 233 The Hongo have a regular system of ownership marks, made by cutting one or both ears in various patterns. These marks are hereditary in lineages and there are sometimes stories to account for their origin. Families within the lineage usually have no additional marks. The Manchu rarely earmark their cattle, their herds being so small that ownership is never in question.

232 There is no attempt at systematic cattle breeding and it does not seem to have occurred to the natives that their herds could be improved in this way. One informant expressed surprise when I told him of our methods, then said that after all the native bull was of itself, for the best bull would defeat the others and take all the cows.

227 Young bulls are often castrated, but solely with the idea of improving the flesh. A Manchu informant said that two bulls in a herd must always be castrated at the same time, so that they could

[i.e., dogs - Analyst]

give each other sympathy in their affliction. If one was captured alone, he would die of grief. The Betsileo have a similar belief, but I could not learn whether it was universal among the Tanala.

Most of the Tanala territory is poorly suited to cattle culture because of the heavy forest and constant rain. It is only along the western margin of their lands, where they border on the plateau, that one finds real grazing country. The Tanala herds are usually small and, although cattle have great social significance, they contribute little to the physical well-being of the people. They are only killed in connection with ceremonies, and the average Tanala does not taste beef once a month. Indeed, cattle killings are so rare that to dream of eating or eating beef is a bad omen, presaging a funeral in the family. Hides are so little used that, until European traders provided a market for them, it was customary to cut up the animals without flaying them and cook meat and skin together.

The Betsileo consider milk a luxury, and it is almost impossible to purchase it in their territory. It is a by-product, taken only when the cow seems to have more than enough to feed her calf. Milking, like everything else connected with cattle, is done exclusively by men. The explanation given for this is that it is a dangerous occupation. Actually, it is a laborious process, requiring three persons. One man holds the calf where the cow can see and lick it, another milks, usually squatting on the right side, and a third holds the cow's tail over her back and gently rubs her vagina with his fingers. The milk is boiled at once, while still warm. It is considered disgusting to drink it fresh. After boiling, it is either drunk or cooked with rice.

The Ibongo make more use of milk and are somewhat more expert at milking, although they use the same method. They rarely boil their milk. A little is drunk fresh, but most of it is deliberately soured. A little sour milk is always left in the milking gourd so that the new milk turns almost at once. The curds are eaten with cooked rice and the whey drunk. None of the Tanala know how to make butter or cheese.

Apparently cow's milk was rarely if ever used to supplement or replace mother's milk in feeding nursing infants. The idea has recently been borrowed from Europeans, but it is still considered rather unnatural and is used only as a last resort.

The wheel and plow were unknown in Madagascar prior to European contact. The Tanala never use their cattle for draught or transport and this holds for the rest of the island, with one or two exceptions. The Imerina and Betsileo now use ox carts and

horns and vault over his head, alighting on one's feet. The present natives say that the sport was designed to give the young men a chance to exhibit their strength and agility, but its almost exclusive association with funerals suggests that it may once have had a deeper significance. A good bull leaper enjoyed considerable prestige and there were numerous chances to insure access in the sport.

Watching fighting bulls seems to have been a commoner sport among the Ibongo than among the Mimbo. There, villages would pit their best bulls against each other and wager heavily on the outcome. The men of the two villages would line up on opposite sides of the arena and beat the ground with heavy sticks to encourage their bulls. Excitement ran high and the events often broke up in a fight.

In order to incite the bulls a young biter was sometimes led up. Another method was to collect ticks filled with blood from the bulls themselves. A small patch of ground in the center of the arena was torn up as though bulls had been fighting there and the blood from the ticks squeezed out on it. It is said that when the most recently bull saw and smelled this he would stand and give battle.

Goats are much less numerous than cattle and several of the Tonala genus have taken on raising them. The few animals I saw were large and shaggy, with long, well-developed horns. Most of them were black, but with a few black on white individuals. Goats are never milked and rarely killed for eats. As far as I could learn, they are never employed for sacrifices, although the genus who raise them have no taboo against this.

Chickens are numerous in all villages and are the main source of fresh meat. Six breeds are recognized and those I saw were of all sizes and colors. They are fed with the refuse of the rice pounding, but have to forage for most of their food and, in consequence, lean and athletic. Eggs are considered a delicacy. Nests are made for the hens by splitting and spreading an end of a six-foot section of large bamboo, interweaving other bamboo splints to form a crude basket (Fig. 2, b). This is lined with straw. The nests are planted in the ground close to the sides of the dwelling. The overhanging eaves protect them from rain, while the smokiness and height of the bamboo give protection from snakes and other vermin. Sitting hens are usually kept in a corner of the dwelling. Hens with chicks are brought into the house every night until the young are old enough to fly. Cocoon birds roost on the rafters or in low trees. There are no wild chickens.

J. Lowie E-6 (1920-21) 1920 ??? Tweedie ???

coast was cut, each piece wrapped in leaves, and the whole packed 252.
in. Stones, heated in a near-by fire, were placed on top and the whole
covered with more leaves, but no earth or embers. The moisture
from the meat and leaves made a little broth, which collected in
the bottom of the hole. This method continued in use long after
the introduction of pottery and one locality is still known as Anton-
zaira because it was the usual practice of the people living there.

Calves or small cattle were sometimes cooked whole by means of
thick spongy vines of two species called *mbipaka* and *mbimvovo*.
The ends of two or three of these vines were inserted into each
nostril and into the anus, while the other ends were put in a fire.
The hot ash and steam conducted into the animal in this way cooked
it thoroughly. It is said that this method is still used by cattle thieves
when they wish to devour their booty on the spot.

At the present time nearly all food is boiled in iron pots obtained 255
from the traders. Such pots are highly valued and when a Tonsia [171]
earns his own territory to work in a town he will usually purchase
one with his first wages. Some native families have a number of [594]
them displayed on the shelf above the fireplace as a sign of wealth.
They are readily loaned to neighbors or travelers, but etiquette [124]
requires that the borrower leave a little food in the pot when he
returns it. Pots are supported in the fire by a low tripod made from
three pointed stones bedded in the earth of the fireplace.

The amount of rice to be cooked for a meal is measured out by 252.
means of a small, stiff basket. This is of standard size and holds [604]
slightly more than the cup used as a unit in our own recipes. One
measure of dry rice is allowed for each adult, with a smaller measure
for each child. In some houses I saw a number of graduated rice
measures, used for children of different ages.

The rice, which has previously been pounded and winnowed, is
washed until the water drains off clear. It is then put in the pot
with about twice its amount of water. It is allowed to boil dry.
Most of the grains are crisp and flaky, but a layer of burned rice
adheres to the vessel. After the unburned rice has been taken out,
water is put in the pot, stirred and brought to a boil. This water,
which tastes somewhat like weak coffee, is drunk with the meal
and is considered a delicacy. As a luxury, rice may be boiled with
milk or broth. It is usually if ever salted while cooking.

Although boiled rice is the staple diet, it is never served without 242.
a side dish of some sort to give it flavor. From the very poor have
boiled greens, made from the leaves and shoots of a great variety

of pitfalls. Thick stews of beans or ground nuts are the commonest accompaniment. Sweet potatoes are also eaten with rice, but mainly merely as luxuries as they are too rich.

352. Eggs, meat and fish are considered luxuries. Eggs are always boiled. Large fish are allowed to roll dry and then browned in their own grease. Meat is usually boiled, the broth forming an important part of the meal. Iron meat hooks with ornamental handles are used to remove it from the pot (Fig. 5, g). Meat may also be cut into thin strips and broiled over a bed of coals. Iron roasting forks with three, four or seven tines are used for this (Fig. 5, h, j). At the present time, broiling is not popular, partly because much of the fat is lost and partly because of the extreme toughness of the native beef.

349. The only materials used for seasoning are potash, salt and chillies. The potash is a substitute for salt and now that the latter has become cheap and plentiful it is only used for variety. The natives say that it must be taken sparingly, as it is bad for the digestion. Potash is made by burning the roots of a certain reed, mixing the ashes with water, and straining off the liquor. The strainers are of matting, triangular at the rim and tapering to a point (Fig. 6, a). The liquor is put in shallow, wooden bowls and allowed to evaporate. The potash is pale grey and granular and is readily crumbled with the fingers.

348. [illegible] Salt has always been obtained in trade. Formerly it came from the east coast, where the natives made it by evaporating sea water. It brought a high price locally and Tuaregs who left their territory to serve as hunters would bring back as much of it as they could. Even now it has an exaggerated value in the eyes of the natives. Traders told me that a handful of salt given with a purchase would delight them more than a gift of three or four times its real value.

347. The native salt comes in large, coarse white crystals. It is somewhat coarser than that we use in making ice cream. It often contains earth and other impurities and the Tuaregs dissolve it, pass it through strainers like those used in potash making, and then recrystallise it. It is kept in small gourds, joints of bamboo, or little sacks of cloth or matting.

345. 346. The salt has to be crushed before use and every household has one or more small wooden mortars for the purpose. These mortars are commonly shaped like an hourglass and have a tight-fitting cover (Fig. 6, c). Sometimes two mortars are joined side by side, one being used for salt and the other for chillies (Fig. 6, d). There